

Common Cysteine Backbone

1					50
human_gremlin.pro	-----	-----	-----	-----	-----
human_cerberus.pro	MHLLLFQLLV	LLPLGKTTRH	QDGRQNOSSL	SPVLLPRNQR	ELPTGNHEEA
human_dan.pro	-----	-----	-----	-----	-----
human_beer.pro	-----	-----	-----	-----	-----
	51				100
human_gremlin.pro	-----	-----M	SRTAYTVGAL	LLLLGTLLPA	AEGKKKGSQG
human_cerberus.pro	EEKPDLFVAV	PHLVAT.SPA	GEGQRQREKM	LSRFGRFWKK	PEREMHPSRD
human_dan.pro	-----	-----	-----	-----	-----
human_beer.pro	-----	-----	-----	----MQLPLA	LCLVCLLVHT
	101				150
human_gremlin.pro	AI.PPPDKAQ	HNDSEQTQSP	QQPGSRNRGR	GQGRGTAMPG	EEVLESSQEA
human_cerberus.pro	SDSEPFPPGT	QSLIQPID.G	MKMEKSPLRE	EAKKFWHHFM	FRKTPASQGV
human_dan.pro	-----	-----	-----	MLRVLVGAVL	PAMLLAAPPP
human_beer.pro	AFRVVEGQGW	QAFKNDATFI	IPELGEYPEP	PPELENNKTM	NRAENGGRPP
	151	↓	↓	↓	200
human_gremlin.pro	LHVTERKYLK	RDWCKTQPLK	QTIHEEGCNS	RTIINRF.CY	GQCNSFYIPR
human_cerberus.pro	ILPIKSHEVH	WETCRTVPFS	QTITHEGCEK	VVVQNNL.CF	GKCGSVHFP.
human_dan.pro	INKLALFPDK	SAWCEAKNIT	QIVGHSGCEA	KSIQNRA.CL	GQCFSYSVPN
human_beer.pro	HHPFETKDVS	EYSCRELHFT	RYVTDGPCRS	AKPVTELVCS	GQCGPARLLP
	201	↓	↓		250
human_gremlin.pro	HIRKEEGSFQ	SCSF...CKP	KKFTTMMVTL	NCPQLQPPTK	K.KRVTRVKQ
human_cerberus.pro	..GAAQHSHT	SCSH...CLP	AKFTTMHLPL	NCTELSSVIK	V...VMLVEE
human_dan.pro	TFPQSTESLV	HCDS...CMP	AQSMWEIVTL	ECPGHIEVPR	VDKLVEKILH
human_beer.pro	NAIGRGKWWR	PSGPDFRCIP	DRYRAQRVQL	LCPGGEAPRA	RKVRLVAS..
	↓↓				300
human_gremlin.pro	CRÇ.ISIDLD	-----	-----	-----	-----
human_cerberus.pro	CQCKVKTEHE	DGHILHAGSQ	DSFIPGVSA-	-----	-----
human_dan.pro	CSCQACGKEP	SHEGLSVYVQ	GEDGPGSQPG	THPHPHPHPH	PGGQTPEPED
human_beer.pro	CKCKRLTRFH	NQSELKDFGT	EAARPQKGRK	PRPRARSAKA	NQAELENAY-
	301	314			
human_gremlin.pro	-----	-----			
human_cerberus.pro	-----	-----			
human_dan.pro	PPGAPHTEEE	GAED			
human_beer.pro	-----	-----			

Figure 1

Human Beer Gene Expression by RT-PCR

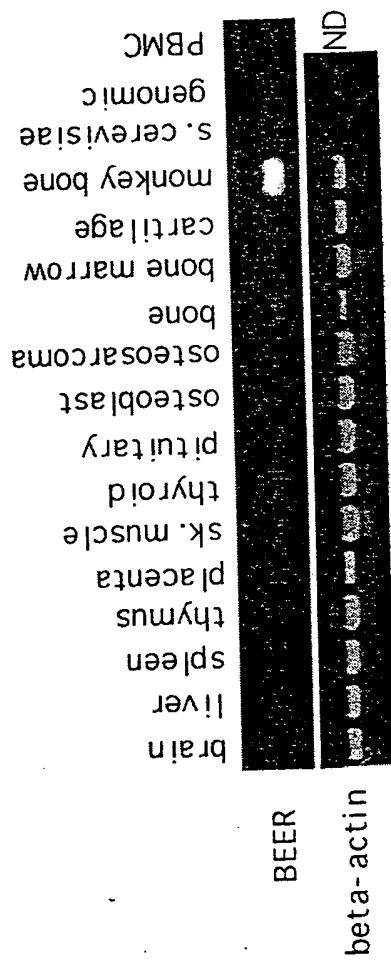


Fig. 2

RNA In Situ Hybridization of Mouse Embryo Sections

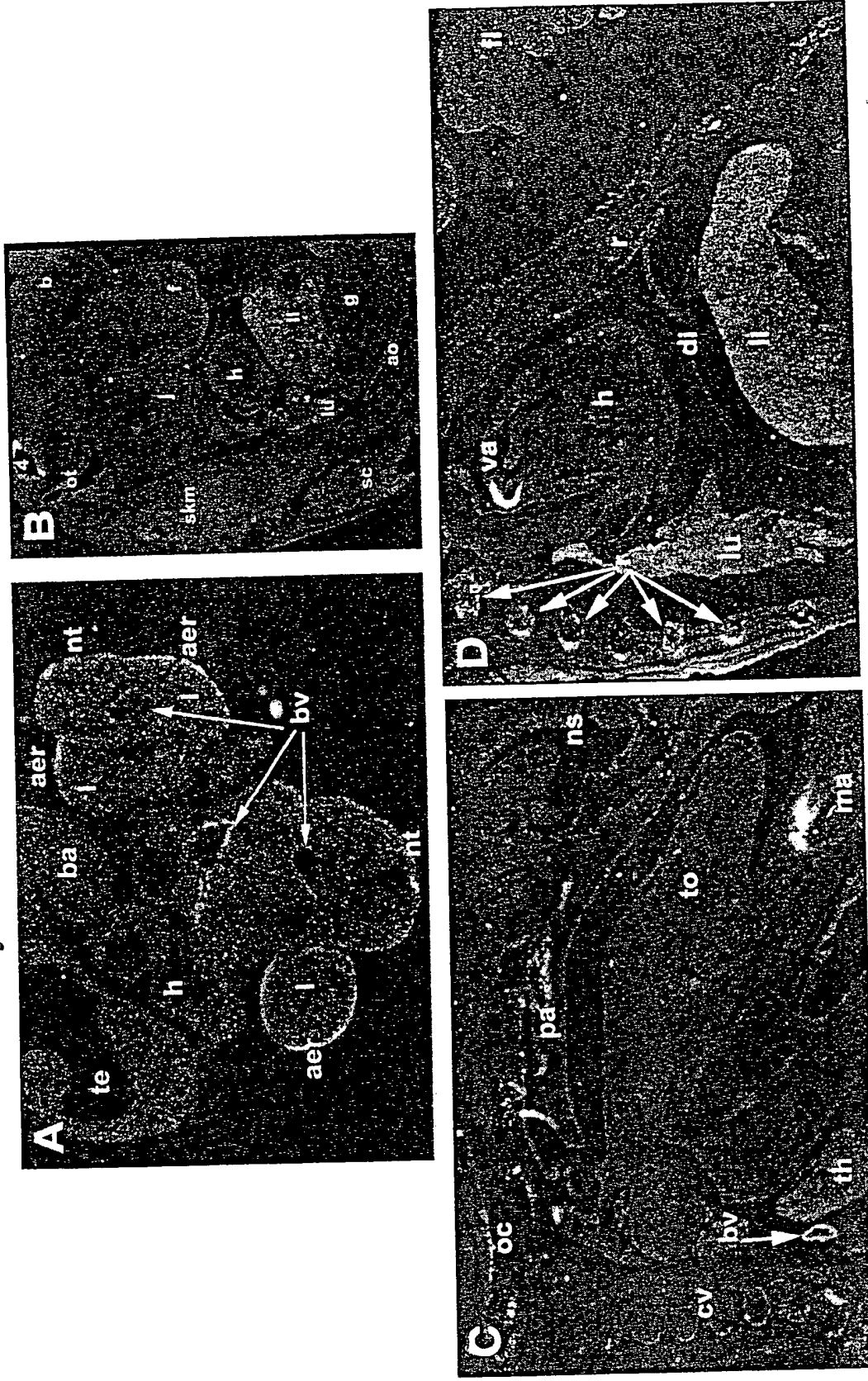


Fig. 3

Antibody Selectivity

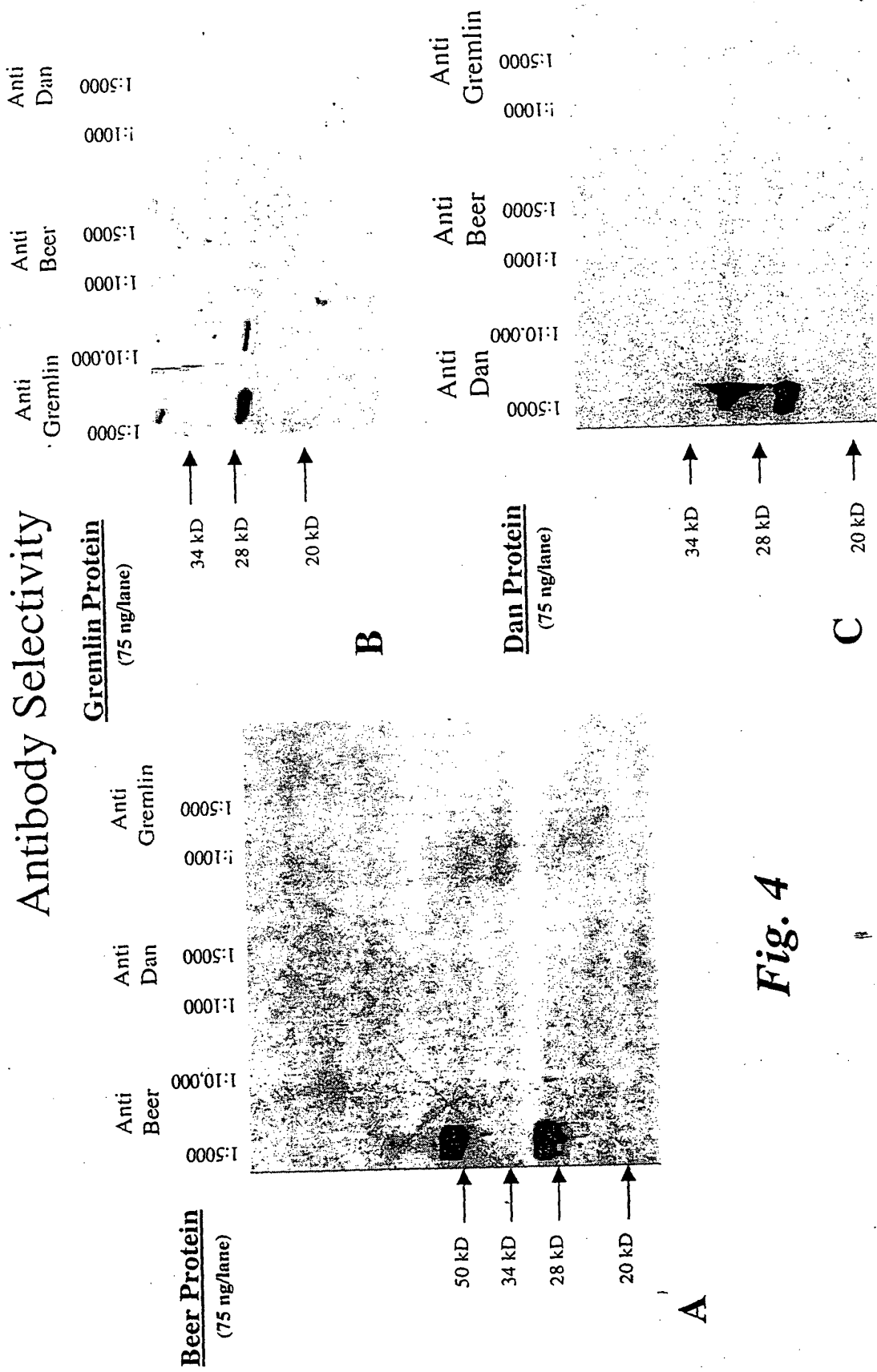
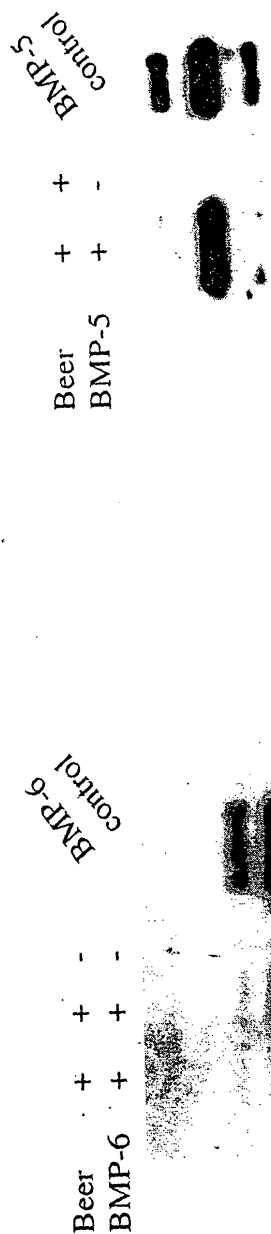
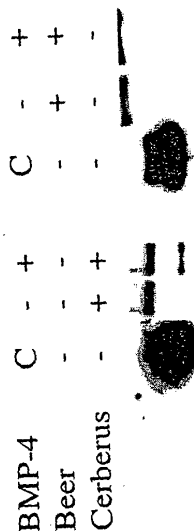


Fig. 4

Evaluation of Beer binding to BMP family members Anti-FLAG Immunoprecipitation



*Anti-BMP-5 western blot



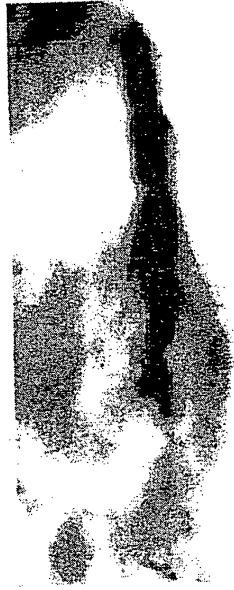
*Anti-BMP-6 western blot

*Anti-BMP-4 western blot

Fig. 5

BMP-5/Beer Dissociation Constant Characterization

.75 1.5 7.5 15 30 60 120 nM BMP-5

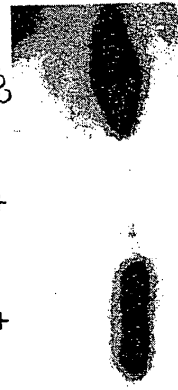


*Anti-FLAG immunoprecipitation *Anti-BMP-5 western blot

Ionic Disruption of BMP-5/ Beer Binding

NaCl(mM)	500	150	150
Beer	+	+	-
BMP-5	+	+	+

BMP-5 western control



* Anti FLAG immunoprecipitation
*Anti BMP-5 western

Fig. 6